Maryland
DEPARTMENT OF
INFORMATION TECHNOLOGY

Larry Hogan | Governor
Boyd K. Rutherford | Lt. Governor
Michael G. Leahy | Secretary
Lance Schine | Deputy Secretary

September 9, 2020

The Honorable Senator Guy Gazzone
Chair, Senate Budget and Taxation Committee
3 West, Miller Senate Building
Annapolis, Maryland 21401

The Honorable Delegate Maggie McIntosh
Chair, House Appropriations Committee
121 House Office Building
Annapolis, MD 21401

Dear Chairman and Madam Chair:

I respectfully submit the information requested in the 2020 Joint Chairmen's Report regarding Device as a Service procurement found on page 67 of the report.

If you have any questions, please do not hesitate to contact me.

Best regards,

DocuSigned by:

Michael G. Leahy

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Michael Leahy
Secretary
Department of Information Technology

During the 2020 Legislative Session of the Maryland General Assembly, the House Appropriations and Senate Budget and Taxation Committees requested that the Department of Information Technology (DoIT) provide a report on the procurement of Device as a Service. The General Assembly requested that the report provide a survey of states that have already undertaken this type of procurement or have issued requests for proposals for this type of service, including but not limited to, the number of State employees served, the number of devices available for selection, and types of operating systems. The committees request a report to include a contrast between the annual costs of these procurements with the equivalent costs incurred by the State under the current procurement model for and support of DoIT's inventory, maintenance, and support of hardware and associated software. Further, the report should address any concerns that DoIT has related to security and inventory matters that present barriers to the State moving to a 'Device as a Service' model.

The Department offers the following report in response to the committees' request.

Device as a Service (DaaS) is an emerging service model. According to multiple market research sources, the global Device as a Service (DaaS) market is poised to attain a growth rate in excess of 50% during the forecast period 2017-2023. DaaS is the offering of Personal Computer (PC) devices as a paid service. This model allows the State to subscribe to end user IT devices (PCs, tablets, smartphones, and other mobile devices) and standard operating software while outsourcing the device management (device backups, asset tracking, security, and end of life disposal) to an external service provider.

The State will select the hardware, software, services, quantities needed, and a hardware refresh cycle. Additionally, the DaaS service is typically defined as follows:

- a per-device cost ,
- an underlying contract (typically for two to three years),
- a somewhat limited number of choices from their overall device lineup (this typically applies when contracted through an Original Equipment Manufacturers (OEMs),
- a subscriber can only replace hardware at the end of the contract,
- devices will typically come with the software the subscriber needs to use already installed, and
- the vendor typically includes a visible upgrade path for patches and updates.

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Historically, State IT purchases are treated as large capital acquisitions and agencies are expected to see value from the purchase over some predefined period of time (five to seven years). The rate of technology change, however, has led to PCs becoming functionally obsolete after an increasingly shorter period. Consequently, the investment in hardware technology is no longer a one-time long-term investment. Instead it is becoming an ongoing operational expense that must be incorporated into yearly budget planning for agencies.

In the past, the long useful life of a PC has resulted in it being viewed as a discretionary expenditure. Often budgetary concerns resulted in PC refresh budgets being reduced leading to hardware lifecycles being extended. In the case of the State of Maryland, significant expenditures resulted from the replacement of PCs, many of which were well beyond their anticipated life, because the requirements of newer operating systems (Windows 10) far exceed the processors and memory included with the device when purchased.

A DaaS subscription model would allow the State to scale up and down devices as needed in response to budgetary concerns. Additionally, the current budgetary pressure on State positions also affects the size of the IT staff available to provide support. The consolidation of processes and enlisting the help of an outside DaaS provider may help to reduce costs and provide additional expert-level knowledge, allowing for current contractors and internal resources to focus on other tasks.

Assumptions

Endpoint device management is a complex collection of technical duties and responsibilities that requires flexible and adaptable technical staff to provide support for the evolving technology environment. DaaS offerings include varying components. Based on this particular JCR request, this analysis assumes the DaaS subscription will include: acquisition and procurement, imaging services, physical installation, basic set-up, final preparation and migration of data, systems management, hardware and software support, and asset retirement.

Furthermore, we are assuming a need to contract a third-party vendor for this service per State requirements, without knowing who that vendor may be or their pricing model, we have chosen Dell's methodology for comparison purposes.

Method

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Dell uses a Forrester tool to analyze the Total Economic Impact (TEI) of moving to a DaaS solution. TEI not only measures costs and cost reduction (areas that are typically accounted for within IT) but also the increase in the effectiveness of overall business processes.

The TEI method employs four fundamental elements in modeling the financial impact: 1) cost and cost reduction, 2) benefits to the entire organization, 3) risk, and 4) flexibility. Given the increasing sophistication of IT investment cost analyses, the TEI methodology serves an extremely useful purpose by providing a complete picture of the total economic impact of purchase decisions.
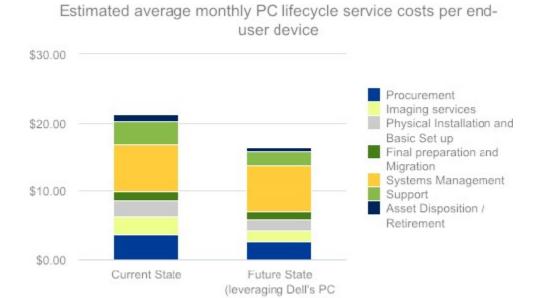
Result

The Department of Information Technology (DoIT) currently manages approximately 12,000 endpoints across 32 agencies. The current environment consists of 75% desktops and 25% laptops. As a result of the increasing need to support remote work, DoIT expects future deployments to include a larger percentage of laptop devices. Consequently, we ran multiple scenarios with varying distributions of laptops versus desktops and recorded no appreciable differences in the results.

Our analysis assumed 12,000 end point devices and with a three-year lifecycle Although DoIT is currently managing to a five-year lifecycle, a three-year life cycle was used for analysis to align with a typical DaaS contract and the realization that the useful lives of devices are shrinking. Hardware costs were averaged based on current pricing to fit the 3-year model for comparison purposes. In general, the DaaS support costs are expected to rise about four percent for each additional year after year three.

Based on the inputs and the assumptions made, the adoption of Dell's PC Lifecycle Services provides the following estimated financial impact.

- Estimated average monthly PC lifecycle service costs per end-user device (current state): $21.26
- Estimated average monthly PC lifecycle service costs per end-user device (future state, leveraging Dell's PC Lifecycle services): $16.45

Figure 1: Estimated Average Monthly PC Service Costs

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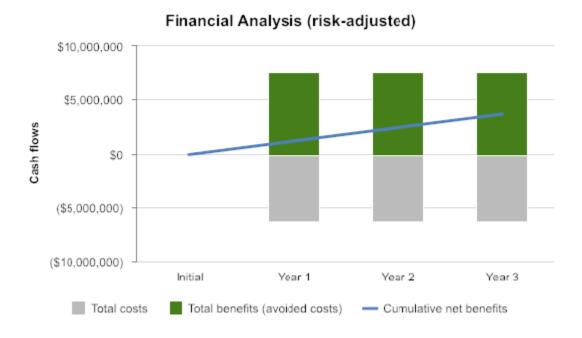DEPARTMENT OF
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Figure 2: Estimated Cash Flows and Benefits

Cash Flow Analysis (risk-adjusted estimates)						
	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	$68,850	$6,226,558	$6,226,558	$6,226,558	$18,748,525	$15,553,379
Total benefits (avoided costs)	$0	$7,472,796	$7,472,796	$7,472,796	$22,418,388	$18,583,737
Net benefits	($68,850)	$1,246,238	$1,246,238	$1,246,238	$3,669,863	$3,030,358
ROI						19%
Total benefits (PV)						<6

Table 1: Cash Flow Analysis

- Total cost benefits as defined in the chart above equate to the sum of assumed life-cycle service costs and hardware refresh costs.
- DoIT does not foresee any issues with inventory. The addition of these services would provide better device tracking and inventory services, enabling all agencies to meet DGS requirements for inventory management and asset disposal.
- DoIT foresees no significant security issues at this time. Most vendors offer necessary security management services. That includes all necessary updates or patches. Monitoring of the devices ensures adherence to security policies at all times. The management of

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fleet inventory, including location and condition, helps to maintain better security. Since the delivery model includes end-of-life disposal, there is the assurance that devices and data are properly disposed of.

Examples of DaaS Procurements

Our model indicates DaaS potentially offers significant cost savings. To date we have not been able to identify any significant adoptions of DaaS, as defined in this JCR, in State government. In most cases, States looking for alternatives to the traditional model have migrated towards solutions which reduce the reliance on the end user device and move critical processing and data storage to private and public environments. We do believe, however, there is evidence public sector organizations have begun considering the DaaS concept. As examples, the city of Houston, TX issued an RFP in 2019 for coverage of over 12,000 devices, the State University Retirement System of Illinois submitted a RFP in 2019 for a much smaller user base but the offering also included Infrastructure as a Service, Scott County of MN issued a RFP in 2018 for 1,035 PCs as well as 300 printers, 100 scanners, 1,000 desk phones and multiple Verizon devices totaling another 350 units, and the city of Norfolk, VA issued a RFP in 2019 for 5,000 devices to include workstations, laptops, micro-form factors, all-in-ones, and tablets. Many others have issued RFPs for just hardware lifecycle and imaging services (PC as a Service). The most notable may be the State of Oklahoma who currently partnered with Dell for a leasing and PCaaS offering for over 15,000 devices.

J. B. JENNINGS
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March 4, 2021

The Honorable Paul G. Pinsky
Education, Health and Environmental Affairs Committee

RE: Senate Bill 924: Procurement – Information Technology – Cloud-Based Virtual Desktop Infrastructure

Dear Chairman and Members of the Committee:

Senate Bill 924 requires the Department of Information Technology (DoIT) to initiate a request for proposals (RFP) for the implementation of an intergovernmental cloud-based virtual desktop infrastructure. There is one amendment to clarify the inclusion of Device as a Service (DaaS) in the RFP.

Technology continues to transform government. Virtual Desktop Infrastructure (VDI) is a technology that delivers virtual desktop systems or applications to users remotely either as an on premise or cloud resource. DaaS is a VDI hosted in the cloud and paid for as a subscription service. Essentially, DaaS assumes the responsibility for managing the desktop infrastructure resulting in tremendous up front cost savings, greater agility and elasticity, as well as, enhanced technical assistance.

I request the committee's favorable consideration of Senate Bill 924 with amendment.